What is claimed is:

1. An energy-conserving computer remotely reachable for establishing instant communications, comprising:

(a) a switchable power-supply system comprising switching means, for selectively providing switchable power;

(b) a group of switchable circuit means in power connection with said switchable power-supply system, said group of switchable circuit means comprising main microprocessor circuitry and nonvolatile memory storage;

(c) a keep-alive power-supply system for continuously providing keep-alive DC power;

(d) a group of keep-alive circuit means in power connection with said keep-alive power-supply system, said group of circuit means comprising a keep-alive communication circuit, keep-alive memory circuitry, and keep-alive control means; and

(e) keep-alive operating instructions stored in said keep-alive memory circuitry;

whereby said keep-alive operating instructions are provided for allowing said keep-alive control means to request said keep-alive communication circuit to detect a communication signal in a keep-alive state in which said switchable power-supply system is deactivated for conserving energy.

2. The energy-conserving computer of claim 1, wherein said keep-alive communication circuit is adapted to comprise circuitry means for performing conversion between digital and analog signals in said keep-alive state.

3. The energy-conserving computer of claim 1, wherein said keep-alive control means is adapted to comprise keep-alive microprocessor circuitry for controlling said keep-alive communication circuit and said keep-alive memory circuitry to respectively receive and store incoming information having a size smaller than a storage size available on said keep-alive memory circuitry, so as to render said energy-conserving computer reachable and operable for establishing instant communications in said keep-alive state.

4. The energy-conserving computer of claim 1, wherein said keep-alive operating instructions are provided for allowing said keep-alive control means to activate said switchable power-supply system to supply said switchable power selectively (i) if in response to detection of said communication signal, no communication link is able to be established within a predetermined period of time, (ii) if said nonvolatile memory storage needs to be accessed, or (iii) if a manual power-up signal is detected.

5. The energy-conserving computer of claim 1, wherein said group of switchable circuit means further comprises a switchable communication circuit rendered actuatable in response to said

communication signal for establishing communication with a remote communication system.

6. The energy-conserving computer of claim 1, wherein said group of switchable circuit means further comprises volatile memory circuitry for storing information randomly accessible to said main microprocessor circuitry and wherein said keep-alive operating instructions comprise task information readily available to said keep-alive control means for restoring previous task activity from said nonvolatile memory storage to said volatile memory circuitry when said switchable power-supply system is activated.

7. The energy-conserving computer of claim 1, (a) wherein said group of switchable circuit means further comprises volatile memory circuitry for storing information randomly accessible to said main microprocessor circuitry and (b) wherein said switchable power-supply system is adapted to independently provide (i) a first power supply to said volatile memory circuitry and said main microprocessor circuitry and (ii) a second power supply to said nonvolatile memory storage, so as to allow said energy-conserving computer to direct information retrieval and storage only on said volatile memory circuitry for gaining full operating speed.

8. The energy-conserving computer of claim 1, (a) wherein said group of switchable circuit means further comprises volatile memory circuitry for storing information randomly accessible to said main microprocessor circuitry, (b) wherein said switchable power-supply system is adapted to receive AC power from an external AC-power source and to independently provide (i) a first switchable power supply to said volatile memory circuitry and said main microprocessor circuitry and (ii) a second switchable power supply to said nonvolatile memory storage, and (c) wherein said keep-alive power-supply system comprises a battery power source arranged to provide backup DC power to said switchable power-supply system when said AC power is suddenly absent, so as to allow said energy-conserving computer to safely direct information retrieval and storage only on said volatile memory circuitry for gaining full operating speed.

9. The energy-conserving computer of claim 1, wherein said group of switchable circuit means further comprises means actuatable for dissipating heat.

10. The energy-conserving computer of claim 1, wherein said group of switchable circuit means further comprises cooling means for selectively dissipating heat, and wherein said switching means is adapted to comprise a relay rendered temperature-sensitive for supplying a switchable power supply from said switchable power-supply system to said cooling means only when the temperature inside said energy-conserving computer exceeds a preset value.

11. The energy-conserving computer of claim 1, wherein said switchable power is selected from the group consisting of AC power, regulated DC power, DC power, and their combinations.

12. The energy-conserving computer of claim 1, wherein said keep-alive power-supply system

comprises means for providing said keep-alive DC power from a power source selected from the group consisting of a signal-transmitting medium carrying keep-alive power, an external AC-power source, battery, rechargeable battery, fuel-cell means, and their combinations.

13. The energy-conserving computer of claim 1, wherein said switchable power-supply system and said keep-alive power-supply system further comprise separate power sources each selected from the group consisting of an external AC-power source, battery, rechargeable battery, fuel-cell means, and their combinations for respectively providing said switchable power and said keep-alive DC power.

14. An energy-conserving communication apparatus remotely reachable for establishing instant communications, comprising:

(a) a switchable power-supply system comprising switching means, for selectively providing switchable power;

(b) a keep-alive power-supply system connectable with a signal-transmitting medium that carries a keep-alive power source, for providing keep-alive power from said keep-alive power source; and

(c) a group of keep-alive circuit means in power connection with said keep-alive power-supply system, said group of keep-alive circuit means comprising (i) a keep-alive communication circuit coupled to said signal-transmitting medium, and (ii) keep-alive control means for controlling an activity of said switching means, so as to enter a keep-alive state in which said switchable power-supply system is deactivated while said keep-alive communication circuit remains operable for detecting a communication signal initiated from a remote communication system.

15. The energy-conserving communication apparatus of claim 14, wherein said signal-transmitting medium is selected from the group consisting of at least one cable, coaxial cable, optical fiber, hybrid fiber coaxial cable, CATV cable, and their combinations each being utilized for carrying a respective keep-alive power source and communication signal.

16. The energy-conserving communication apparatus of claim 14, wherein said keep-alive power-supply system comprises an additional power source selected from the group consisting of battery, rechargeable battery, and their combinations for supplying backup DC power.

17. The energy-conserving communication apparatus of claim 14, wherein said switchable power is selected from the group consisting of AC power, regulated DC power, DC power, and their combinations.

18. The energy-conserving communication apparatus of claim 14, wherein said switchable power-supply system further comprises means for providing said switchable power from a power source selected

from the group consisting of an external AC-power source, battery, rechargeable battery, fuel-cell means, and their combinations.

19. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises main microprocessor circuitry and nonvolatile memory storage operable when said switchable power-supply system is activated for providing said switchable power.

20. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises means actuatable in response to said communication signal for printing incoming information.

21. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises means actuatable for dissipating heat.

22. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises cooling means for selectively dissipating heat, and wherein said switching means is adapted to comprise a relay rendered temperature-sensitive for supplying a switchable power supply from said switchable power-supply system to said cooling means only when the temperature inside said energy-conserving communication apparatus exceeds a preset value.

23. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises a switchable communication circuit coupled to said signal-transmitting medium and rendered actuatable for establishing communication in response to detection of said communication signal.

24. The energy-conserving communication apparatus of claim 14 further comprising a group of switchable circuit means in power connection with said switchable power-supply system, wherein said group of switchable circuit means comprises a switchable communication circuit coupled to said signal-transmitting medium, and wherein said group of keep-alive circuit means further comprises (i) keep-alive memory circuitry and (ii) keep-alive operating instructions stored in said keep-alive memory circuitry for allowing said keep-alive control means to request said keep-alive communication circuit to detect said communication signal in a keep-alive state and to actuate said switchable communication circuit for establishing communication in detection of said communication signal.

25. An energy-conserving operating system comprising the steps of:

(a) activating a set of keep-alive operating instructions continuously operable for governing when to activate a set of main operating instructions that requires more random access memory than said set of keep-alive operating instructions, so as to selectively enter an energy-conserving state and a main operating state;

(b) powering down to said energy-conserving state in which said set of main operating instructions is rendered inoperable, if selectively detecting no activity for a preset period of time or detecting a power-down signal; and

(c) powering up to said main operating state in which said set of main operating instructions is rendered operable, if detecting a power-up signal.

26. The energy-conserving operating system of claim 25, wherein said set of keep-alive operating instructions is adapted to comprise a communication program operable in said energy-conserving state for requesting a keep-alive communication circuit to be activated for detecting a ring signal.

27. The energy-conserving operating system of claim 25, wherein said set of main operating instructions is adapted to comprise a communication program operable in said main operating state for requesting a communication circuit to be activated for detecting a ring signal.

28. The energy-conserving operating system of claim 25, wherein said activating is adapted to load said set of keep-alive instructions to keep-alive random-access-memory circuitry and wherein said powering up is adapted to restore said main operating instructions from nonvolatile memory storage to main random-access-memory circuitry.

29. The energy-conserving operating system of claim 25, wherein said activating is adapted to load said set of keep-alive instructions to a predetermined region of keep-alive random-access-memory modules that can be continuously kept alive, and wherein said powering up is adapted to restore said main operating instructions from nonvolatile memory storage to another predetermined region of said keep-alive random-access-memory modules that can be powered selectively up or down.

30. The energy-conserving operating system of claim 25, wherein said set of keep-alive operating instructions is adapted to create keep-alive task information for restoring previous task activity when said powering up is executed, said keep-alive task information being created, updated, and saved to keep-alive random-access-memory circuitry before said powering down is executed.

31. The energy-conserving operating system of claim 25, wherein said set of keep-alive operating instructions is adapted to create keep-alive task information for restoring previous task activity when said powering up is executed, said keep-alive task information being created, updated, and saved to keep-alive random-access-memory circuitry and nonvolatile memory storage before said powering down is executed.

32. The energy-conserving operating system of claim 25, wherein said activating is adapted to load said set of keep-alive instructions to keep-alive random-access-memory circuitry and wherein said powering up is adapted to enter (i) a first operating state in which said set of main operating instructions will be restored via actuating nonvolatile memory storage for retrieving information therefrom to main random-access-memory circuitry, (ii) a second operating state in which information retrieval and storage will be limited to only said main random-access-memory circuitry, so as to execute said main operating instructions at full operating speed, and (iii) a third operating state in which any newly modified files will be stored from said main random-access-memory circuitry to said nonvolatile memory storage in detection of said power-down signal.

33. The energy-conserving operating system of claim 25, wherein said powering down and said powering up are adapted respectively to deactivate and to activate a switchable power-supply system for not providing and for providing power to a plurality of circuit means including main microprocessor circuitry and volatile memory circuitry utilized for execution of said main operating instructions, so as to enter said energy-conserving state and said main operating state, respectively.

34. The energy-conserving operating system of claim 25, wherein said powering down is adapted to be executed after any newly modified files are stored to nonvolatile memory storage.

35. The energy-conserving operating system of claim 25 further comprising a step of allocating part of keep-alive random-access-memory circuitry for storing incoming information to be received in said energy-conserving state.

36. The energy-conserving operating system of claim 25 further comprising a step of powering up to a communication state in which a switchable power-supply system is activated to provide a switchable power supply only to a switchable communication circuit and nonvolatile memory storage for respectively receiving and storing incoming information to be received, if only a ring signal is detected.

37. The energy-conserving operating system of claim 25 further comprising the steps of (i) allowing a user to request a forwarding or routing service, and (ii) if said forward or routing service is requested, initiating another communication link to another remote communication apparatus accordingly.

38. An Internet communication system comprising:

(a) communication means connected to the Internet and rendered operable for sending a ring signal and thus for initiating an outgoing communication link to an offline communication device;

(b) a control system for controlling operation of said communication means; and

(c) operating instructions available to said control system for requesting said communication means to send said ring signal in accordance with a request submitted

through an incoming communication link from a remote communication device, so as to allow said Internet communication system to provide requested communication from said remote communication device to said offline remote communication device via the Internet.

39. The Internet communication system of claim 38, wherein said communication means comprises communication-link means selected from the group consisting of telephone lines, at least one cable, at least one optical fiber, at least one hybrid fiber coax, at least one cellular phone channel, at least one satellite communication channel, at least one wireless communication channel, and their combinations, for initiating a plurality of said outgoing communication links.

40. The Internet communication system of claim 38, wherein said communication means is adapted to comprise a plurality of local communication circuitry connected to the Internet at separate locations, each of said local communication circuitry being rendered operable for initiating a plurality of said outgoing communication links and for establishing another plurality of said incoming communication links.

41. The Internet communication system of claim 38, wherein said communication means is adapted to comprise a plurality of local communication circuitry connected to the Internet at separate locations, and wherein said operation instructions are adapted to comprise a step of selecting one of said local communication circuitry that is situated at a location with an area code in accordance with said request to send said ring signal to said offline remote communication device.

42. The Internet communication system of claim 38, wherein said operating instructions comprise a step of automatically terminating said outgoing communication link selectively (i) if said remote communication device terminates said incoming or said outgoing communication link, and (ii) if said Internet communication system completes the sending of requested information to said offline remote communication device and detects no activity on said outgoing communication link for a preset period of time.

43. The Internet communication system of claim 38 further comprising memory storage for storing information to be transmitted between said remote communication device and said offline remote communication device.

44. The Internet communication system of claim 38 further comprising memory storage for storing information to be delivered thereto, and wherein said operating instructions are provided for requesting said communication means to send a message to said offline remote communication device through said outgoing communication link to instantly notify the delivering of said information.

45. A method for enabling an Internet service provider to provide requested communications,

comprising the steps of:

(a) providing communication means operable (i) for establishing an incoming communication link to the Internet when receiving an incoming ring signal from a remote communication device and (ii) for initiating an outgoing communication link through sending an outgoing ring signal to an offline remote communication device;

(b) providing a control system for controlling operation of said communication means; and

(c) providing operating instructions available to said control system for instructing said communication means to send said outgoing ring signal and thus to initiate said outgoing communication link in accordance with a request submitted from said remote communication device, so as to allow said remote communication device to communicate with said offline remote communication device via the Internet.

46. The method of claim 45, wherein said providing communication means is adapted to provide a plurality of local communication circuitry connected to the Internet at separate locations, each of said local communication circuitry being further rendered operable for establishing a plurality of said incoming communication links and for initiating another plurality of said outgoing communication links.

47. The method of claim 45, wherein said providing communication means is adapted to provide a plurality of local communication circuitry connected to the Internet at separate locations, and wherein said providing operation instructions is adapted to provide a step of selecting one of said local communication circuitry that is situated at a location with an area code in accordance with said request to send said outgoing ring signal to said offline remote communication device.

48. The method of claim 45 further comprising the steps of (i) determining if a forwarding or routing service is requested, (ii) if yes, instructing said communication means to further send another outgoing ring signal to another offline remote communication device accordingly, so as to initiate another outgoing communication link, and (iii) forwarding or routing requested information to said another remote communication device.

49. A communication operating system for enabling an Internet communication system to provide requested communication links, comprising the steps of:

(a) allowing said Internet communication system to establish a plurality of incoming communication links each to be initiated by a remote communication apparatus to access the Internet;

(b) determining if said remote communication apparatuses each submits a request for communicating further with an offline communication apparatus; and

(c) if yes, instructing said Internet communication system to send an outgoing ring signal to

a respective one of said offline communication apparatuses accordingly so as to establish another plurality of outgoing communication links.

50. The communication operating system of claim 49 further comprising the steps of (i) determining if a forwarding or routing service is requested, and (ii) if yes, sending another outgoing ring signal for initiating a third communication link to another offline remote communication apparatus accordingly.